

SMART's Removable Flash Solutions

Enterprise USB Memory Key

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SMART Modular Technologies' Enterprise USB Memory Key is offered with both multi-level cell (MLC) NAND flash in capacities of 8 to 16GBs and single-level cell (SLC) NAND flash in capacities of 2 to 16GBs. The USB Memory keys address the need for enhanced reliability by incorporating on-board error detection and correction, and global wear leveling algorithms that provide reliable operation over the product life cycle.

SLC NAND provides 2 million program/erase cycles for most applications and exceeds comparable multi-level cell (MLC) NAND technology by a factor of 100X in durability and 2X in speed. The MLC NAND flash USB Memory Key is specifically designed for cost conscious applications where large capacities are required in a small form factor. The limited program/erase endurance of MLC NAND means that these products should only be utilized in applications with a low frequency write profile.

Product Family At-A-Glance

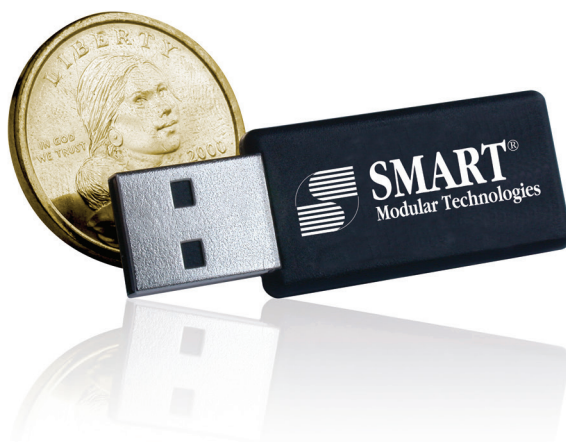
	Capacity (GB)	Performance Sequential
Enterprise USB Memory Key		
USB 2.0 SLC	2 to 16GB	22MB/s Read (maximum) 16MB/s Write (maximum)

Features

- Whole-drive global wear leveling
- Advanced Error Detection/Correction circuitry for superior data reliability (24 bit ECC Engine)
- Improved shock and vibration performance over rotating media
- Zero seek time
- Noiseless operation
- Low power dissipation
- USB-class definition for bootability support
- Field-upgradeable firmware via USB bus
- Small Form Factor

Applications

- Server firmware upgrades
- Specialized industrial applications



Specifications

	Enterprise USB Memory Key		
Performance			
	SLC		MLC
Read (maximum)	22MB/s		21.1MB/s
Write (maximum)	16MB/s		8.2MB/s
Host Interface Rate (maximum)	480MB/s		480MB/s
Reliability			
Data Retention	10 years @ 25 °C and 10% of Drive Life		
Endurance	200 K P/E Cycles		
Error Correction / Error Detection (BCH)	Up to 24 bits/KByte block (8K flash)		
Power			
	Typical	Maximum	
Vcc	5.0 ± 10%	5.5%	V
Read	107	170	mA
Write	114	239	mA
Idle	71	78	mA
Environmental			
Shock/Acceleration	Operating Half-Sine 70 in/sec, 3 shocks along each axis, X, Y, Z, in each direction		
Vibration Operating	0.9 g rms 10-500 Hz, 30 minutes per side (total of 6 sides)		
Vibration Non-Operating	Random 13.6 g rms 10-500 Hz, 30 minutes per side (total of 6 sides)		
Operating Temperature - Commercial	0°C to 70°C		
Storage Temperature	-55 C to 95 C		
Humidity	5% to 95%, non-condensing, relative humidity		
Altitude	-200 m [656 ft] to 10,600 m [34,777 ft]		
Physical			
	Standard		
Length	46.15 mm [1.82 in]		
Width	15.75 mm [0.62 in]		
Thickness	5.33 mm [0.21 in]		

Ordering Information

Part Number	Capacity (GB)
USB 2.0 - SLC	
SG9MK2GPA	2
SG9MK4GPB	4
SG9MK8GPC	8
SG9MK16GPD	16



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